The Ageing of the British Population

SOME FACTS

THE GROWTH OF the British population, and its causes, are fairly well known but the concept of ageing, the manner in which this has occurred and the prospects for future developments in this respect are less widely appreciated.

In the following table, the proportions of the British population in various broad age-groups are measured at intervals over the period 1851-1951:

AGE LAST BIRTHDAY	1851	1871	1891	1911	1931	1951
	%	%	%	%	%	%
0–14	35	36	35	31	24	22
15–29	28	27	27	26	26	20
30–44	19	18	19	21	21	22
45–59	11	12	12	13	17	19
60–74	6	6	6	7	10	13
75 and over	1	1	1	2	2	4
Total	100	100	100	100	100	100

The population in which the age-distribution is illustrated grew from 21 million in 1851 steadily to 49 million in 1951, and its increase was attributable to improvements in mortality, offset in the later part of the period by falling fertility. Its age-distribution, on the other hand, remained virtually constant from 1851 to 1891 (and had probably done so since the beginning of the century). Thereafter, the proportion of people under age thirty fell from 63 to 42 per cent, and the proportion over forty-five rose from 18 to 36 per cent. This, taken as a whole, is the phenomenon of ageing and the period over which it occurred coincided with a period during which mortality and fertility fell. Earlier, while mortality alone was declining, no appreciable change in age-distribution occurred.

What of the future? According to the latest official population projection, the population of Britain is to be expected to increase from its present level of 53 million to 72 million in the year 2002. Its age-distribution over this period will develop as follows, if the forecast is realized:

AGE LAST BIRTHDAY	1962	1982	2002
	%	%	%
0–14	23	25	26
15–29	20	21	22
30–44	20	19	20
45–59	20	16	16
60–74	13	14	11
75 and over	4	5	5
Total	100	100	100

The expectations during this period are of a further fall in mortality but a rise in fertility—neither very marked in extent. The age-distribution is likely to be slightly younger at the end than it is at the present time, but the difference is not substantial.

We thus have three periods, the principal characteristics of which may be summarized as follows:

PERIOD	POPULATION	AGE-DISTRIBUTION	MORTALITY	FERTILITY
Up to 1891	Rising	Constant	Falling	Constant
1891-1951	Rising	Getting much older	Falling	Falling sharply
1951-2000	Rising	Becoming slightly younger	Falling	Rising slightly

From this statement it is apparent that there is at least a superficial connection between fertility trends and age-distribution, but the contribution of mortality seems to be relatively unimportant.

To ascertain whether the ageing of the British population—or some other population, for it

has been a common occurrence in Western countries over the last hundred years—is attributable to mortality changes, or to fertility changes, to some combination of the two, or even to neither but migration instead, is no mere academic exercise. It is important as a measure of the significance of certain elements in our social progress. For instance, if by prolonging life the doctors have made us old and ineffective as a nation, it might be argued that the resources devoted to medical progress should be reduced. If on the other hand fertility needs encouraging in order to keep the nation young and vigorous, some would hold that more money should be devoted to the provision of family allowances.

In his 1962 Darwin lecture, published in THE EUGENICS REVIEW for April, 1963, Professor Parkes stated that the ageing of our population "is becoming a major social problem and one for which medical science, in the widest sense, is directly responsible."

It is, of course, obvious that, in general, the activity of the doctors in producing improvements in longevity must lead to an older population. The question is, how potent are the effects? Much will depend on the ages at which the improvement occurs: a reduction in early childhood alone—say from 10 per cent to 2 per cent at age 0—will have nearly the same effect as an increase in fertility, in the case cited, by 8 per cent; this alone would lead to a *younger* age-distribution. A reduction in the death rate confined to ages over seventy would affect the age-distribution only a little, as relatively few persons survive to the oldest ages, but would make the population just a little older.

It is tempting to compare the different English Life Tables in order to measure the influence of mortality upon age-distribution. Thus, for instance, according to English Life Table No. 3, relating to a hundred years ago, the proportion of persons of both sexes over age sixty-five was about 9 per cent, whereas according to the latest corresponding Table to-day (No. 11) the proportion is 14 per cent. Unfortunately, however, there is a fallacy in this comparison. It is not valid because the levels of fertility required to keep the population stationary are not the same in each case. The fertility that maintained the 1860 life table population in a stationary state would support a growing population in 1960, in which the proportion of persons age sixty-five and over would in fact be only about 9 per cent. Thus a fall in the death rate of as much as from 2·4 per cent to 1·5 per cent has had little effect upon the age-distribution.

There is, in fact, only one way in which a proper measurement can be made of the relative contributions of mortality and fertility to the change in the age-distribution of the population and that is to work out, in full detail, what would have happened if matters had developed in various ways. It has thus been calculated that if fertility had not fallen since 1870 in Great Britain, but had remained at its mid-Victorian level, we should now have over 100 million people alive in this country, of whom 5 million would be aged over sixty-five. This proportion of the aged (5 per cent) is about the same as in 1870, in spite of all the mortality improvements that have taken place since then. The actual proportion today is 12 per cent, and the rise from 5 per cent is nearly all attributable to changes in fertility. Persons aged sixty-five and over to-day were all born before 1900, when fertility was still high, whereas the fall in fertility in this country to one-half its Victorian level has naturally considerably reduced the relative numbers of the young.

During the past decade, the researches of distinguished demographers in half-a-dozen or more different Western countries have demonstrated that increases in the proportion of older persons there during the past decades have been a result almost entirely of declines in the fertility rate and virtually not at all of declines in the mortality rate. (In the future, declines in the death rate may well emerge as the dominant factor in determining the age-distribution, although this is by no means certain.) In one survey, it was shown that, in a group of European countries, if fertility had remained at the pre-1900 level, the median age of the population would actually have been reduced in nearly all cases, and the proportion of persons over sixty-five would have fallen in one-half of them. (Ansley Coale, in a paper presented to

the 1955 Conference of the Milbank Memorial Fund).

Finally, the following table summarizes the position as it has been stated in a United Nations publication* devoted to the "Ageing of Population and its Economic and Social Implications":

CHANGES IN MORTALITY AND FERTILITY	EFFECTS ON THE PERCENTAGE OF THE POPULATION OF THE BROAD AGE-GROUPS		
	0–14 YEARS	15–59 YEARS	60 YEARS AND OVER
Decline in MORTALITY:			
As it has occured in developed and under-developed countries	Increase	Decrease	Very slight change
As it may be expected to occur in future in developed countries	Little change but tendency to decrease	More rapid decrease	Increase
Decline in FERTILITY:			
As it has occurred in developed countries and may occur in under-developed countries	Decrease	Increase	Increase
As it may occur in future in developed countries†	Continued decrease	Little change but tendency to decrease	Continued increase

* 1956. ST/SOA/Series A/26.

†It should be borne in mind that if this assumption became fact, the result would be a decreasing population.